AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1.   (Previously Presented)   An optical differential phase shift keyed transmitter comprising:

a differential encoder having first and second outputs, the first and second outputs being of opposite polarity to one another, wherein the differential encoder differentially encodes data to produce first and second data streams of opposite polarity;

a first RZ converter connected to the first output of the differential encoder and a second RZ converter connected to the second output of the differential encoder, wherein the first and second RZ converters convert the first and second data streams to RZ signal format;

a first RZ driver connected to an output of the first RZ converter and a second RZ driver connected to an output of the second RZ converter, wherein the first RZ driver amplifies a first of the data streams to generate a first RZ driven data stream after the first data stream has been converted to the RZ signal format, and the second RZ driver amplifies a second of the data streams to generate a second RZ driven data stream after the second data stream has been converted to the RZ signal format; and

a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled, wherein the dual electrode Mach Zehnder modulator phase modulates a coherent light signal from the coherent light source and outputs as a differential phase shift keyed RZ optical signal, and wherein first and second electrodes of the Mach

Zehnder modulator are driven sequentially by the first RZ driven data stream and the second RZ driven data stream, respectively.

2.   (Cancelled)

3.   (Previously Presented)   A transmitter according to claim 1, wherein either the first or second RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.

4.   (Previously Presented)   A method of encoding data as a differential phase shift keyed RZ optical signal comprising the steps of:

differentially encoding the data to produce two data streams of opposite polarity;

converting each data stream to RZ signal format;

amplifying at a first RZ driver a first of the data streams to generate a first RZ driven data stream after the first data stream has been converted to the RZ signal format;

amplifying at a second RZ driver a second of the data streams to generate a second RZ driven data stream after the second data stream has been converted to the RZ signal format;

driving a first electrode of a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled with the first RZ driven data stream and sequentially driving a second electrode of the dual electrode Mach Zehnder modulator with the second RZ driven data stream and

phase modulating a coherent light signal from the coherent light source at the dual electrode Mach Zehnder modulator, and outputting as a differential phase shift keyed RZ optical signal.

5.   (Previously Presented)   A method according to claim 4, wherein the first and second RZ data streams are inverted RZ data streams.

6.   (Previously Presented)   A transmitter according to claim 1, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the first and second RZ converter.

7.   (Previously Presented)   A transmitter according to claim 1, wherein the first and second RZ drivers are inverting RZ drivers configured to convert RZ signals output from the RZ converters to inverted RZ signals.

8.   (Previously Presented)   A transmitter according to claim 1, wherein the first and second RZ drivers are non-inverting RZ drivers.